

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte R. LEE ROBERTS,  
MARK KEVIN ADDISON  
and ANDREW SCOTT TAYLOR

**MAILED**

**JAN 27 2003**

Appeal No. 2002-1430  
Application 03/935,365

**PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES**

ON BRIEF

Before COHEN, STAAB, and MCQUADE, Administrative Patent Judges.  
MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

R. Lee Roberts et al. originally took this appeal from the final rejection (Paper No. 17) of claims 1 through 7, 18, 19 and 28. Upon consideration of the appellants' main brief (Paper No. 21), the examiner issued a superseding Office action (Paper No. 23) reopening prosecution and entering new rejections of claims 1 through 7, 18, 19 and 28. In response, the appellants filed a supplemental brief (Paper No. 25) and requested that the appeal be reinstated. Granting the request, the examiner issued an examiner's answer (Paper No. 26) and forwarded the application to

this Board for review of the new rejections of claims 1 through 7, 13, 19 and 28. Claims 8 through 17 and 20 through 27, the only other claims pending in the application, stand withdrawn from consideration.

#### THE INVENTION

The appellants' invention relates to "underdrains for liquid filtration systems, particularly water and waste water filtration systems" (specification, page 1). Claims 1 and 18 are representative of the subject matter on appeal and read as follows:

1. An underdrain block for an underdrain system supporting a filter media bed in a liquid filtration system, the underdrain block comprising:

- an upper wall, side walls, and a lower wall;
  - at least one lateral member within the underdrain block between the upper wall and the lower wall;
  - at least two chambers within the underdrain block, each chamber being defined by the lateral member;
  - a plurality of orifices in the upper wall of the underdrain block; and
  - a plurality of internal orifices in the lateral member;
- wherein the underdrain block is jointless and extends substantially the length of a filter media supported thereby.

18. An underdrain block for an underdrain system supporting a filter media bed in a liquid filtration system, the underdrain block comprising:

- an upper wall, side walls, and a lower wall, said walls defining an interior of said underdrain block;
- three lateral members within the underdrain block comprising two vertical lateral members and one horizontal lateral member, said two vertical lateral members dividing said interior of the underdrain block into three sections of approximately equal size, said horizontal lateral member intersecting said two vertical

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lateral members such that said horizontal lateral member further divides the interior of the underdrain block into six chambers comprising three upper chambers of approximately equal size located above said horizontal lateral member and three lower chambers of approximately equal size located below said horizontal lateral member;

a plurality of upper orifices through the upper wall of the underdrain block; and

a plurality of internal orifices through the horizontal lateral member.

#### THE PRIOR ART

The references relied on by the examiner as evidence of anticipation and obviousness are:

Eades et al. (Eades)	4,579,659	Apr. 1, 1986
Roberts	4,619,765	Oct. 28, 1986
Berkebile et al. (Berkebile)	5,103,627	Apr. 28, 1992
Brown et al. (Brown '920)	5,269,920	Dec. 14, 1993
Brown et al. (Brown '988)	5,489,338	Feb. 6, 1996

#### THE REJECTIONS

Claim 4 stands rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter the appellants regard as the invention.

Claims 1 and 3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Roberts.

Claims 1 and 3 stand rejected under 35 U.S.C. § 112(b) as being anticipated by Berkebile.

Claims 1 through 5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Brown '988.

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Claims 6, 7 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown '388 in view of Roberts or Berkebile.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown '388 in view of Brown '920.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Berkebile in view of Brown '920.

Claim 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown '388 or Berkebile in view of Brown '920 and Eades.

Attention is directed to the appellants' main and supplemental briefs (Paper Nos. 22 and 25) and to the superseding Office action and examiner's answer (Paper Nos. 23 and 26) for the respective positions of the appellants and the examiner with regard to the merits of these rejections.

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The restatement in the examiner's answer of the 35 U.S.C. § 102(b) rejection based on Roberts does not carry forward claim 5. As the examiner has not expressly withdrawn claim 5 from the rejection, we assume that the omission was inadvertent (see In re Bush, 296 F.2d 491, 496, 131 USPQ 263, 267 (CCPA 1961)).

DISCUSSION

I. The 35 U.S.C. § 112, second paragraph, rejection

The examiner, observing that claim 4 recites an underdrain block which "extends the length of the filter media bed," submits that

[s]ince it has been established that the invention being claimed in the independent claim 1, of which claim 4 depends therefrom, is a subcombination in the form of an underdrain block, and does not positively recite the limitation of a filter media bed, the limitation of a filter media bed in claim 4 lacks antecedent basis, and thus, making this claim indefinite" (answer, page 4).

The preceding references in the preamble of parent claim 1 to "a filter media bed" and in the preamble of claim 4 to "a filter bed" provide the term in question with adequate antecedent basis and render it's meaning reasonably clear for the purposes of defining the underdrain block recited in the claim.

Hence, we shall not sustain the standing 35 U.S.C. § 112, second paragraph, rejection of claim 4.

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In the final rejection (Paper No. 17), claim 1 stood rejected under 35 U.S.C. § 112, second paragraph, on the grounds that it was unclear whether the claim was directed to an underdrain block per se or an underdrain block in combination with filter media. The examiner withdrew this rejection (see page 2 in the superseding Office action, Paper No. 23) in light of the appellants' argument in the main brief (Paper No. 22) that claim 1 does not recite the filter media as an element of the claimed invention but only as a limitation which defines the block.

II. The 35 U.S.C. § 102(b) rejections

Roberts, Berkebile and Brown '388, the references respectively applied by the examiner in support of the three anticipation rejections, disclose underdrain or filter blocks designed to be arranged end-to-end in parallel rows to form filter beds which support granulated filter media.

The Roberts block 12 includes an upper or top wall 40, side walls 52, a lower wall (see Figure 3), a lateral member or partition 18 within the block between the upper and lower walls, chambers or channels 20, 22, 26, 28 defined by the lateral member, orifices or passages 42 in the upper wall and internal orifices or ports 36 in the lateral member. The top wall 40 includes a section 44 removably affixed to the rest of the block by fastening means 46. The removable section 44 facilitates inspection, repair and cleaning of the block interior. Roberts teaches that

[t]he blocks 12 of this invention preferably are formed from a premixed clay by a continuous extrusion process, wherein a continuous multi-block section initially is formed as a single unit. The extrusion operation is then followed by a cutting operation to separate the continuous extrusion into the separate blocks employed to form the bottom construction. Either after or before the cutting operation, the top surface is punched to provide the desired drainage passages 42 and the interior horizontal partition 18 likewise is punched to form the interconnecting ports 36 . . . .

In accordance with a unique aspect of the present invention, a separate cutting operation is employed to form the removable top section 44. Most preferably, the punching operation employed to actually form the vertical passages 42 through the top wall 40 also forms the passages 46 that are adapted to receive the removable fastening means 48. This is accomplished by initially punching the vertical passages 46 through the top wall 40, and then cutting the top wall section 44 from the block 12 at a location intermediate the opposed vertical ends of the vertical passages 46 [column 4, lines 56 through 62].

The Berkebile block 10 includes an upper or top wall 12, side walls 16, a lower wall 18, a lateral member or transverse wall 24 within the block between the upper and lower walls, chambers or channels 28, 30, 36, 38, 42 defined by the lateral member, orifices or apertures 14 in the upper wall and internal orifices 46, 50 in the lateral member. According to Berkebile,

[the filter block 10] of the present invention may be made of fired clay or a light weight, high density, injection molded plastic such as polyethylene of high molecular weight. The polyethylene is more easy to handle and more durable during transportation and installation. Alternatively, the exterior and interior walls of block 10 may be extruded to form continuous lengths of filter block [column 7, lines 34 through 41].

The Brown '333 block 146 shown in exemplary Figure 11 includes an upper or top wall 148, side walls 152, a lower or bottom wall 150, a lateral member or internal wall 154 within the block between the upper and lower walls, chambers or canals 156, 158 defined by the lateral member, orifices or apertures 170

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in the upper wall and internal orifices (see the drawing figure) in the lateral member. Brown indicates that such blocks are typically about 4 feet long (see column 5, lines 25 through 28; column 10, lines 36 through 41; and column 11, lines 31 through 34) and may be made by extrusion manufacturing processes (see column 10, lines 41 through 44).

Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). It is not necessary that the reference teach what the subject application teaches, but only that the claim read on something disclosed in the reference, i.e., that all of the limitations in the claim be found in or fully met by the reference. Kalmar v. Kimberly Clark Corp., 713 F.2d 760, 770, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1076 (1984).

The appellants (see pages 11 and 12 in the main brief and pages 8 and 9 in the supplemental brief) submit that the subject matter recited in claim 1 is not anticipated by Roberts, Borkhile or Brown '338 because none of these references meets the limitations in the claim calling for the claimed block to be



jointless and to extend substantially the length of a filter media supported thereby. Given the actual scope of claim 1, however, this line of argument is not persuasive with respect to any of the foregoing references.

As indicated above (see n.2, supra), claim 1 recites an underdrain block per se, not an underdrain block in combination with filter media or other underdrain blocks. The underdrain block limitations set forth in the claim read fully on Roberts' multi-block section extruded as a single unit before it is cut to form (1) separate blocks and (2) the removable top wall sections. This uncut multi-block section is jointless and inherently extends substantially the length of filter media supported thereby as broadly recited in the claim. Although the uncut multi-block section constitutes an intermediate product, such does not detract from its use as a reference against claim 1 as Roberts fully intended and appreciated the existence of this intermediate product (see In re Mullin, 431 F.2d 1333, 1336, 179 USPQ 97, 99 (CCPA 1973)). The limitations in claim 1 also read fully on the blocks respectively disclosed by Berkebile and Brown '338, each of which is jointless and inherently extends substantially the length of filter media supported thereby as broadly recited in the claim.

Thus, the appellants' position on appeal that the subject matter recited in claim 1 distinguishes over each of Roberts, Berkebile and Brown '388 is not well taken. We shall therefore sustain the standing 35 U.S.C. § 102(b) rejection of claim 1 as being anticipated by Roberts, the standing 35 U.S.C. § 102(b) rejection of claim 1 as being anticipated by Berkebile, and the standing 35 U.S.C. § 102(b) rejection of claim 1 as being anticipated by Brown '388.

As the appellants have grouped dependent claims 2 through 5 with parent claim 1 for purposes of the appeal (see page 5 in the main brief and page 6 in the supplemental brief), we also shall sustain the standing 35 U.S.C. § 102(b) rejection of claim 5 as being anticipated by Roberts, the standing 35 U.S.C. § 102(b) rejection of claim 5 as being anticipated by Berkebile, and the standing 35 U.S.C. § 102(b) rejection of claims 2 through 5 as being anticipated by Brown '388.

III. The 35 U.S.C. § 103(a) rejections

A. The rejection of claims 6, 7 and 28

Claims 6 and 7 depend from claim 1 and require the longitudinal length, presumably of the claimed underdrain block, to be at least 10 feet and at least 20 feet, respectively. Independent claim 28 recites an underdrain block having a

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longitudinal length of at least five feet. Conceding that Brown '383, which discloses a block typically about 4 feet long, does not meet these limitations, the examiner points to the extruded multi-block sections or lengths described by either Roberts or Berkebile and submits that

[i]t is considered obvious to one of ordinary skill in the art at the time of the invention to modify the length of the underdrain block of Brown et al. (383), by adding the teachings of Roberts (765) or Berkebile et al. (627), in order to form longer blocks necessary to support longer filter media beds of liquid filtration systems [answer, page 10].

There is simply nothing, however, in the broad disclosures by Roberts and Berkebile of extruded multi-block sections or lengths intended to be cut into individual blocks which would have suggested providing the individual block disclosed by Brown '383 with a longitudinal length any longer than its disclosed about 4 foot length. The examiner's reasoning that the specified longer lengths would have been obvious to support longer filter media beds finds no factual support in these references.

Thus, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claims 6, 7 and 28 as being unpatentable over Brown '383 in view of Roberts or Berkebile.

B. The rejections of claim 13

Brown '388 and Berkebile, the respective primary references in these rejections, do not respond to the limitations in claim 13 pertaining to the three lateral members and the particular chambers formed thereby. The examiner's reliance on the underdrain block 16 disclosed by Brown '920 to overcome these deficiencies is unsound. As is readily apparent from Figures 1 and 3 of the Brown '920 reference, the block 16 also lacks response to the subject claim limitations and hence would not have suggested modifying the block of either Brown '388 or Berkebile so as to arrive at the block set forth in the claim.

Therefore, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claim 13 as being unpatentable over Brown '388 in view of Brown '920 or the standing 35 U.S.C. § 103(a) rejection of claim 13 as being unpatentable over Berkebile in view of Brown '920.

C. The rejection of claim 19

Inasmuch as Eades does not cure the above noted shortcomings of the Brown '388, Berkebile and Brown '920 references relative to the subject matter recited in parent claim 13, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of dependent

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claim 19 as being unpatentable over Brown '388 or Berkebile in view of Brown '920 and Eades.

IV. Additional matter for consideration

Upon return of the application to the technology center, the examiner should consider whether the extruded multi-block sections or lengths disclosed by Roberts and Berkebile, considered in conjunction with the conventional 4 foot individual block length taught by Brown '388 and admitted to be prior art the appellants (see pages 3 and 8 in the appellants' specification) would have suggested a multi-block section or length meeting the limitations in claims 6, 7 and 13, thereby warranting an appropriate § 103(a) rejection of these claims.

SUMMARY

The decision of the examiner to reject claims 1 through 7, 13, 19 and 28 is affirmed with respect to claims 1 through 5 and reversed with respect to claims 6, 7, 13, 19 and 28.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

IFWIN CHARLES COHEN  
Administrative Patent Judge

LAWRENCE J. STAAB  
Administrative Patent Judge

JOHN P. MCQUADE  
Administrative Patent Judge

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## INTERFERENCES

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